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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,344	10/29/2003	Christian Schmid	200315617-1	8104

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INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER
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SHAH, MANISH S

ART UNIT	PAPER NUMBER
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2853

MAIL DATE	DELIVERY MODE
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09/28/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/696,344

Applicant(s)

SCHMID ET AL.

Examiner

Manish S. Shah

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-2, 4-7, 9-12 & 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pentel KK (# JP 63-061065) in view of Mammen et al. (# US 2003/0226474 A1).

Pentel KK discloses a highlighter ink composition including (a) from 2 to 17 wt% of coloring material (b) from 65 to 85 wt% of an organic solvent; and (c) from 0.5 to 3 wt% of acid compound, wherein acid compound is ascorbic acid and coloring material is dye or pigment (see Abstract), and the value of pKa is constant to the material, and the ascorbic acid inherently has a pKa value of 4.2. So Pentel KK discloses the acid buffer having a pKa from about 2 to 6, more preferably from 4 to 6. They also disclose that the acid buffer includes a weak acid or weak base (see Abstract).

Pentel KK differs from the claim of the present invention is that (1) the highlighter colorant that is an acid-functionalized pigment or a fluorescent colorant. (2) The liquid vehicle includes water or diethylene glycol. (3) The highlighter colorant selected from Acid Blue 9.

Mammen et al. discloses a method of reducing smear (see Abstract; [0277]) during highlighting including the highlighter composition having a florescent highlighter

colorant (see Examples), and a liquid vehicle, wherein liquid vehicle is water, diethylene glycol, propylene glycol (see Examples), and highlighter colorant is fluorescent and selected from Acid Blue 9 ([0111], see Example: 3-4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the highlighter composition of Pentel KK by the aforementioned teaching of Mammen et al. in order to have smear resistance highlighter ink composition, which gives high quality image without smear.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3 & 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pentel KK (# JP 63-061065) in view of Mammen et al. (# US 2003/0226474) as applied to claims 1-2, 4-7, 9-12 & 27-28 above, and further in view of Kaufmann et al. (# US 5279652).

Pentel KK and Mammen et al. discloses all the limitation of the claimed invention except that the acid buffer is succinic acid and the colorant is the acid functionalized pigment.

Kaufmann et al. teaches that to get the good crystallizing property, marking ink includes the acid buffer, which is selected from succinic acid (column: 4, line: 40-66) and colorant is pigment (column: 9, line: 40-50).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the acid compound in the highlighter composition of Pentel KK as modified by the aforementioned teaching of Kaufmann et al. in order to get the excellent crystallizing characteristic, which gives high quality image with less smear.

3. Claims 13-18 & 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mammen et al. (# US 2003/0226474) in view of Pentel KK (# JP 63-061065) and Kaufmann et al. (# US 5279652).

Mammen et al. discloses a method of reducing smear (see Abstract; [0277]) during highlighting including the steps of ink-jet printing an ink jet ink to form an image on a substrate ([0277]); applying a highlighter composition to the image ([0277]; see Examples), the highlighter composition including a highlighter colorant, which is fluorescent colorant ([0111]; see Examples), and a liquid vehicle (see Examples), and highlighter colorant selected from Acid Blue 9 ([0111]; see Examples: 3-4).

Mammen et al. differs from the claim of the present invention is that (1) the acid buffer has a pKa from 2 to 6, more preferably 4 to 6, wherein acid buffer is selected from ascorbic acid, acetic acid. (2) The acid buffer is succinic acid. (3) The acid buffer is configured for reducing mobility of colorants in the inkjet ink upon therewith.

Pentel KK discloses a highlighter ink composition including (a) from 2 to 17 wt% of coloring material (b) from 65 to 85 wt% of an organic solvent; and (c) from 0.5 to 3 wt% of acid compound, wherein acid compound is ascorbic acid and coloring material is dye or pigment (see Abstract), and the value of pKa is constant to the material, and the ascorbic acid inherently has a pKa value of 4.2. So Pentel KK discloses the acid buffer having a pKa from about 2 to 6, more preferably from 4 to 6. They also disclose that the acid buffer is configured for reducing mobility of colorants in the inkjet ink upon therewith and the acid buffer includes a weak acid or weak base (see Abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the acid compound in the highlighter composition of Mammen et al. by the aforementioned teaching of Pentel KK in order to get the excellent drying characteristic, which gives high quality image with less smear.

Kaufmann et al. teaches that to get the good crystallizing property, marking ink includes the acid buffer, which is selected from succinic acid (column: 4, line: 40-66).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the acid compound in the highlighter composition of Mammen et al. by the aforementioned teaching of Kaufmann et al. in order to get the excellent crystallizing characteristic, which gives high quality image with less smear.

4. Claims 19-26 & 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mammen et al. (# US 2003/0226474) in view of Pentel KK (# JP 63-061065) and Kaufmann et al. (# US 5279652).

Mammen et al. discloses a method of reducing smear (see Abstract; [0277]) during highlighting including the steps of ink-jet printing an ink jet ink to form an image on a substrate ([0277]); applying a highlighter composition to the image ([0277]; see Examples), the highlighter composition including a highlighter colorant ([0111]; see Examples), and a liquid vehicle (see Examples). They also disclose that the inkjet colorant is selected from pigment or water-soluble dye or mixture thereof ([0277]); and the liquid vehicle includes a member selected from water, diethylene glycol and propylene glycol (see Examples).

Mammen et al. differs from the claim of the present invention is that (1) the acid buffer has a pKa from 2 to 6, more preferably 4 to 6, wherein acid buffer is selected from ascorbic acid and acetic acid. (2) The acid buffer is succinic acid.

Pentel KK discloses a highlighter ink composition including (a) from 2 to 17 wt% of coloring material (b) from 65 to 85 wt% of an organic solvent; and (c) from 0.5 to 3 wt% of acid compound, wherein acid compound is ascorbic acid and coloring material is dye or pigment (see Abstract), and the value of pKa is constant to the material, and the ascorbic acid inherently has a pKa value of 4.2. So Pentel KK discloses the acid buffer having a pKa from about 2 to 6, more preferably from 4 to 6. They also disclose that the acid buffer is configured for reducing mobility of colorants in the inkjet ink upon therewith and the acid buffer includes a weak acid or weak base (see Abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the acid compound in the highlighter composition of Mammen et al.

by the aforementioned teaching of Pentel KK in order to get the excellent drying characteristic, which gives high quality image with less smear.

Kaufmann et al. teaches that to get the good crystallizing property, marking ink includes the acid buffer, which is selected from succinic acid (column: 4, line: 40-66).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the acid compound in the highlighter composition of Mammen et al. by the aforementioned teaching of Kaufmann et al. in order to get the excellent crystallizing characteristic, which gives high quality image with less smear.

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-32 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manish S. Shah whose telephone number is (571) 272-2152. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone



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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Manish S. Shah  
Primary Examiner  
Art Unit 2853

MSS

9/21/07